Forces Shaping the Soviet Strategic Weapons Development Program

The ongoing Soviet strategic forces development program raises the question "what do the Soviets have in mind for this program and where do they intend to go?" The breadth and pace of their effort in offensive and defensive system development is impressive in comparison to the current US development program and includes:

* Three new ICBM's under test.
* New silo and launching system designs.
* New guidance techniques for missiles including the long-range SLBM.
* New interceptor missiles and mobile radars.
* A possible mobile ICBM test program.
* Possible development of MIRV's.

What forces are shaping this effort? This is a complicated problem and probably involves at least some of the following Soviet motivations:

* A search for strategic dominance over the US.
* A desire to reduce the technological gap.
* A fear of China and the need to impress China with Soviet strategic superiority.
* Bureaucratic momentum in their military and design organizations.
* Providing bargaining chips in arms control negotiations.
* A shift of emphasis from production and deployment to broader efforts in R&D.

Soviet Strategic Weapons Development Programs

Neither SALT I nor numerous Soviet statements regarding "restraint" on weapons R&D seems to have affected their ongoing program. There may be several reasons for this but, as in the US, large defense RDT&E programs are driven by many forces. The important point in trying to identify these drives and their purposes is to determine what unilateral advantages might accrue to the Soviets as a result of their efforts.

Several purposes might be involved:

1. A Soviet strategic advantage, either qualitative or quantitative, could have great utility. The military and political leverage derived from a margin of strength could be decisive in a confrontation. Even the perception of advantage, which might or might not be real, could be significant in such circumstances. In addition, advantages derived from an asymmetry, favorable to the Soviets, in systems deployed or from an ongoing development program could provide them useful bargaining chips in arms negotiations.

   A desire for some measure of strategic superiority would be a natural goal for a country that has for a long time suffered from a military inferiority complex, as have the Soviets. However, attempting to achieve that objective can also be dangerous. There has been ample demonstration of US capability to respond with awesome speed to a perceived threat. For instance, the rapid growth of the Minuteman Force in the early 1960's caused by the "missile gap" was clearly frightening to the USSR. The Soviet strategy could be to gain superiority without arousing a massive reaction by the US. They may believe that SALT I gave them an opportunity to do that, because the agreement allows them greater numbers of missiles and a greater aggregate throw weight than the US. They could exploit this by making technological improvements in their force through MIRV's and high accuracy. Over the long term, say by the early 1980's, such an initiative, coupled with a failure of the US to respond, would provide them with counterforce options which the US could not match.

   If this were the Soviet objective, we would expect to see both MIRV's and evidence of a drive to high accuracy in at least some of the programs now entering flight test. So far, we do not have enough data to either confirm or deny such trends. But there is no denying

that the new Soviet ICBM's would lend themselves more easily to being both MIRV carriers and more accurate than would the earlier systems.

2. The Reduction of the Technological Gap

For many years the Soviets have been behind the US in virtually every technology area. They know it, they know that the rest of the world knows it, and they don't like it. The first Sputnik was one of the rare occasions when Soviet technology scored a coup. They will never forget the tremendous boost that event gave to their image worldwide. Undoubtedly, they would like to do something similar again.

Closing the technology gap on a broad front will enhance Soviet chances of becoming the dominant military power. With quantitative increases in forces prohibited by SALT, the logical step is a shift in emphasis to qualitative improvements. Evidence is already at hand demonstrating other initiatives, such as stellar corrected guidance for the SS-NX-8 and new launch techniques for two new ICBM's. From the Soviet view, it would seem reasonable to invest in a wide variety of new technology programs, with the hope that one or more breakthroughs will result with an important payoff.

Finally, there is evidence that the Soviets have realized that they need to resort to technology improvements to counter US technology initiatives. For example, the Soviet responses to US missiles' having MIRV's and high accuracy are the new designs for very hard silos for the new Tyuratam ICBM's. These silos may also include improved shock isolation systems for the installed missiles, which would also increase missile survivability. An alternative solution might be to have available a mobile ICBM, and there is some evidence that the new ICBM being tested at Plesetsk is mobile.

3. Concern for China

There is evidence that the Soviets have been motivated by the fear of China's becoming a missile power. There is also evidence that

the Soviets have taken steps to improve their offensive capability against China. It appears that the decisions were made in the early to mid-1960's.

On the defensive side, in 1967 the Soviets started expanding their early-warning radar system so that it could cover threat corridors other than those from US land based or submarine missiles. At a later time they started adding the back face of the Checkov radar in the Moscow area. This face points directly to China, and would give the Moscow ABM's a chance to be fired at targets coming in from that direction.

The new transportable radar in Sary Shagan may also be directed at providing a capability to counter a Chinese missile threat rather than one from the US. This hypothesis would help explain why ABM's being tested do not seem to embody a real improvement over the Moscow ABM for defense against high-speed US reentry vehicles. On the other hand, the new missiles, coupled with the new radar, would have the capability to handle a number of targets, autonomously, and coming in from any direction. This, plus the fact that the system appears designed to be rapidly deployable, would seem to make it well suited to deal with a limited Chinese missile threat. If this line of speculation is correct, the USSR may some day be seeking US understanding for a revision of the ABM treaty justified on counter-China grounds. On the offensive side, it should be noted that SS-11 sites built since 1968, amounting to about 1/5 the total force, were deployed in a manner which permits China to be targeted as well as the US.

China may pose increasing complications to the Soviets and we may see Soviet activity which should be correctly interpreted. They recognize, and have begun to acknowledge unofficially, that the day is past when the USSR could hope to mount a fully disarming strike against the PRC. They may still hope, however, to retain a counterforce option against China. The chief requirement for this is target intelligence which will penetrate the disguises the Chinese are using in their missile deployments and some form of light but widespread ABM defense. Soviet reconnaissance requirements to deal with this problem may prescribe actions on their

part which might make no sense to us in Soviet consideration of a US threat alone. Also, the ABM system now under development at Sary Shagan appears to be suited for this role, and it also appears to be unsuited to engage US reentry vehicles.

4. Momentum

Major weapons programs achieve a life of their own once a commitment has been made to production. Design teams are seldom disbanded, and turn instead to devising follow-on systems, building more efficient systems and correcting problems. The original objectives which stimulated the development are often lost sight of.

This process has often taken place in the US, and we have ample evidence that it goes on in the USSR, too. In fact, conditions in the USSR may favor it.

One should not dismiss momentum as being necessarily mindless or without ultimate benefit. There are many cases of programs which were started for one set of reasons and wound up being useful for other reasons. With development times stretching out to five years and longer, it is no surprise that by the time a program is completed the article may no longer be suited to its original purpose. A perfect case is the first Soviet ICBM, the SS-6, which was originally designed to carry a 15,000 pound atomic warhead but was unsuitable as a strategic weapon. It became and still is the key booster vehicle for much of the Soviet space program.

The point is that development programs which are carried on by bureaucratic momentum need to be studied very carefully to see if they can be exploited to the Soviet advantage.

5. Arms Control

There is no evidence that SALT has had any important effect on the current Soviet weapons development programs. Rather, it is likely that a Soviet objective in SALT I was to protect their options

to go forward with development work. The ABM treaty and interim agreement put no constraints on new R&D, and is therefore not in violation. The programs had their beginnings in the mid-1960's, long before SALT was seriously contemplated and the recent Soviet test activity stems from test site construction begun between 1966 and 1970. Thus, the go-ahead decisions were probably made in the mid-1960's.

No conclusions can be drawn from the pace of events before and after the signing of the treaty. The present rate of activity is faster than it was for some earlier Soviet programs and slower for some others.

The above may be summed up by noting that overall the Soviets are in a very serious competition with the US. This competition is likely to remain a hostile one over the long term. Technological competition, based largely on military oriented R&D, is a major part of the competition. It is this factor that probably influences Soviet strategic objectives the most. It would be dangerous to assume that they will not pursue technological superiority as a goal. This would give them the basis for great flexibility in dealing not only with the US but with other threats which could evolve over the longer term.